

**(19) World Intellectual Property  
Organization  
International Bureau**



**(43) International Publication Date**  
**30 September 2004 (30.09.2004)**

**PCT**

**(10) International Publication Number**  
**WO 2004/083796 A1**

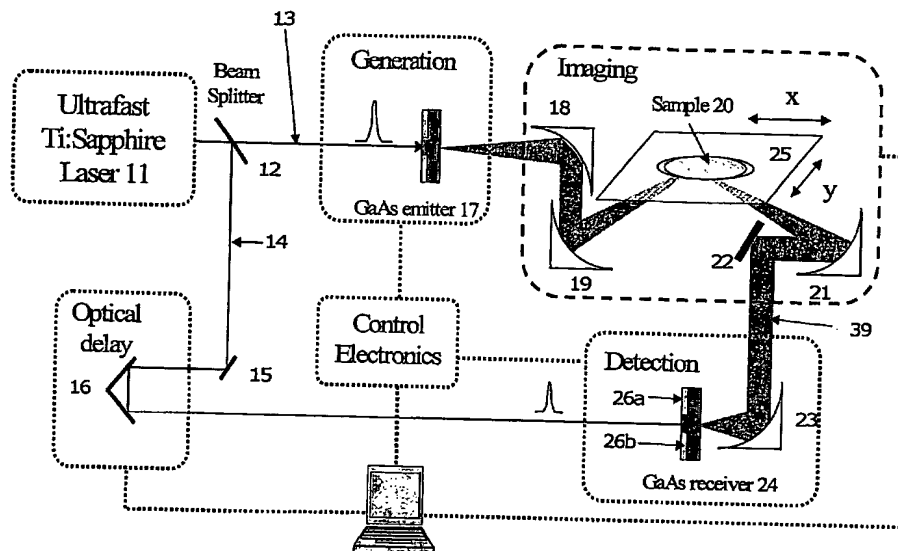
- (51) **International Patent Classification<sup>7</sup>:** **G01J 3/42,**  
G01N 21/35, 21/49
- (21) **International Application Number:**  
PCT/GB2004/001194
- (22) **International Filing Date:** 19 March 2004 (19.03.2004)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**  
0306586.9 21 March 2003 (21.03.2003) GB
- (71) **Applicant (for all designated States except US):** **TER-AVIEW LIMITED** [GB/GB]; 302/304 Cambridge Science Park, Milton Road, Cambridge, Cambridgeshire, CB4 0WG (GB).
- (72) **Inventors; and**
- (75) **Inventors/Applicants (for US only):** **COLE, Bryan, Edward** [GB/GB]; c/o TeraView Limited, 302/304 Cambridge Science Park, Milton Road, Cambridge, Cambridgeshire, CB4 0WG (GB). **KEMP, Michael, Charles**

[GB/GB]; c/o TeraView Limited, 302/304 Cambridge Science Park, Milton Road, Cambridge, Cambridgeshire, CB4 0WG (GB). **TRIBE, William, Roylan** [GB/GB]; c/o TeraView Limited, 302/304 Cambridge Science Park, Milton Road, Cambridge, Cambridgeshire CB4 0WG (GB). **TADAY, Philip, Francis** [GB/GB]; c/o TeraView Limited, 302/304 Cambridge Science Park, Milton Road, Cambridge, Cambridgeshire, CB4 0WG (GB).

- (74) **Agent: GRANLEESE, Rhian, Jane;** Marks & Clerk,  
57-60 Lincolns Inn Fields, London WC2A 3LS (GB).
- (81) **Designated States** (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

*[Continued on next page]*

- (54) Title:** SPECTROSCOPY APPARATUS AND ASSOCIATED TECHNIQUE



- (57) Abstract:** Apparatus and method for detecting an explosive material, involving irradiating an object with a continuous wave (CW) or pulsed beam of Terahertz radiation, preferably in the frequency range of 100 GHz to 100 THz and detecting radiation transmitted and/or reflected from the object. A spectrum is constructed from the detected radiation, which is indicative of a fundamental property of the explosive material. This constructed spectrum is compared with one or more known spectra of explosive materials to determine whether a likeness exists.



(84) **Designated States** (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

**Published:**

— *with international search report*